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MAR 17 1914

ASBESTOSTEEL
for ROOFS AND WALLS

WORKBOOKS AND MAPS
WORKSHOPS

PRINTED IN THE U.S.A.

ASBESTOS
PROTECTED METAL
COMPANY

BEAVER FALLS, PA.

A SUB-STATION OF THE PHILADELPHIA AND GARRETSFORD RAILWAY COMPANY, PHILADELPHIA, PA

The roof is of Asbestostee! construction. Note the pleasing effect of the ceiling—obtained without back-plastering or work of any kind on the underside, all work having been done from the top.

EXTERIOR VIEW OF THE SUB-STATION

ASBESTOSTEEL

for Roofs *and* Walls

Bulletin
Fifty-three

Asbestos Protected Metal Company
Beaver Falls, Pa.

FORGE SHOP OF KEYSTONE DRILLER COMPANY, BEAVER FALLS, PA.
Asbestosteel Sawtooth Roof Construction

FREIGHT STATION, WASHINGTON & ALEXANDRIA R. R., ALEXANDRIA, VA.
Asbestosteel Roof

ASBESTOSTEEL FOR ROOFS AND WALLS

In general two types of commercial building construction are recognized, namely: temporary construction, and permanent construction.

Temporary Construction includes all structures that have a limited life, and resort to this type can be justified only where use and occupancy for but a limited time is needed, or where initial investment must be kept down to the lowest possible figure.

Permanent Construction includes all structures that have a practically unlimited life, and should always be used, as the saving in depreciation and maintenance will generally justify the additional first cost.

The former type of construction has been used more widely in this country than in any other, due to peculiar economic conditions, which resulted from the enormous premium put upon capital in the form of initial cash investment.

Depreciation and Maintenance is a relentless enemy of temporary construction, and the resulting high *maintenance* more than offsets the imagined economy in first cost. These two factors, much neglected by early builders in this country, have taught us through unfortunate and disastrous experiences, the value of building with an eye to the future. Today everybody recognizes the desirability of permanency in building, but still there is much difference in opinion as to the exact ratio of depreciation and maintenance under various conditions of use and with different materials.

Here again much has been learned by bitter experience. For instance, when cheap sheet-steel was first introduced it was welcomed as a permanent material for the covering of buildings and was extensively used on account of its low cost, light weight, and great strength. Later it developed that this modern sheet-steel was susceptible to corrosion to a degree previously unappreciated, threatening the integrity of millions of dollars' worth of structures and their contents. A great cry arose and investigations were begun to determine the causes and find methods for preventing this wholesale destruction of immense values by corrosion of steel. Today much progress has been made in that we know the danger that we must guard against.

Protection Against Corrosion of sheet-steel is usually provided by applying a coating to shield it from the action of the destructive elements. There are two methods in general use: painting and galvanizing.

FREIGHT STATION, WASHINGTON & ALEXANDRIA R. R., ARLINGTON JUNCTION, VA.
The roof of the building and of the platform canopies is of Asbestosteel construction.

Painting is seldom effective. Its effectiveness varies with the kind of paint used and the manner of its application. At best it is short-lived and must be continually renewed.

Galvanizing if properly done is more desirable than painting—and yet it is not permanent. Even the combination of painting galvanized sheets does not approximate the service rendered by Asbestos Protected Metal.

Of all cases, the protection of thin sheet-steel is at once the most difficult and the most necessary, since the slightest corrosion destroys a comparatively large percentage of the total thickness of sound metal. Therefore sheet metal work exposed to the weather must frequently be protected by painting or galvanizing, or both, and consequently rated as belonging in the category of temporary structures.

The Asbestos Protected Metal Company some years ago solved the problem of protecting sheet-steel from corrosion without in any way sacrificing the advantages inherent in corrugated sheets for roof and wall construction, by developing a process whereby sheet-steel was covered on both sides with a uniform coating of asphalt, this in turn being protected from fire and weather exposure by a layer of pure asbestos felt laid over the asphalt while still hot and soft.

Asbestos Protected Metal has been used in actual construction under all manner of conditions and stands today proven the only lasting sheet-metal on the market.

Ordinary sheet-steel being regarded as a short-lived material, practice has only developed uses for it in structures more or less temporary in character.

Asbestos Protected Metal, being a permanent material, presented possibilities absolutely new and hitherto unapproached by any sheet metal. Not only could it displace sheet-steel from the field considered its own, but when combined with concrete and other similar materials, it could be used to great economic advantage in the highest class of *permanent* structures.

This Bulletin is devoted to the special use of Asbestos Protected Metal in connection with concrete for the construction of roofs and curtain walls, a type of construction which we choose to call Asbestosteel.

PLACING THE SELF-PUNCHING CLIP RIVETS

In the erection of an Asbestosteel roof rectangularly corrugated, Asbestos Protected Metal is laid directly upon the purlins. No furring strips are used. Self-punching clip rivets are slipped on the toe of the flange of the steel purlins, then the Asbestos Protected Metal is laid on the points of the rivets and driven through with a riveting tool and clinched. The Asbestos Protected Metal is absolutely non-corrosive, its rectangular corrugations furnish maximum of strength with minimum weight of material. It requires no scaffolding, no back-plastering, no skilled labor, and yet the underside presents an unusually fine appearance. Indeed, any amount of finishing could scarcely improve the matte-white beamed effect of the Asbestosteel. Furthermore, this Asbestos surface is rendered permanent and impervious by impregnation applied in the last stage of manufacture of the Asbestos Protected Metal. This is the only light concrete roof in which all erection work is done from the top.

ASBESTOSTEEL

Asbestosteel roofing consists of three essential elements:

1—Asbestos Protected Metal, which serves as self-centering form for the concrete covering, as finished ceiling, requiring no back plastering, and as chief strength contributing member of the construction.

2—Steel wire reinforcement to prevent temperature cracks in the concrete and impart added strength to the slab.

3—Concrete which fills and strengthens the corrugations, distributes the load, and provides a suitable surface for the application of waterproofing.

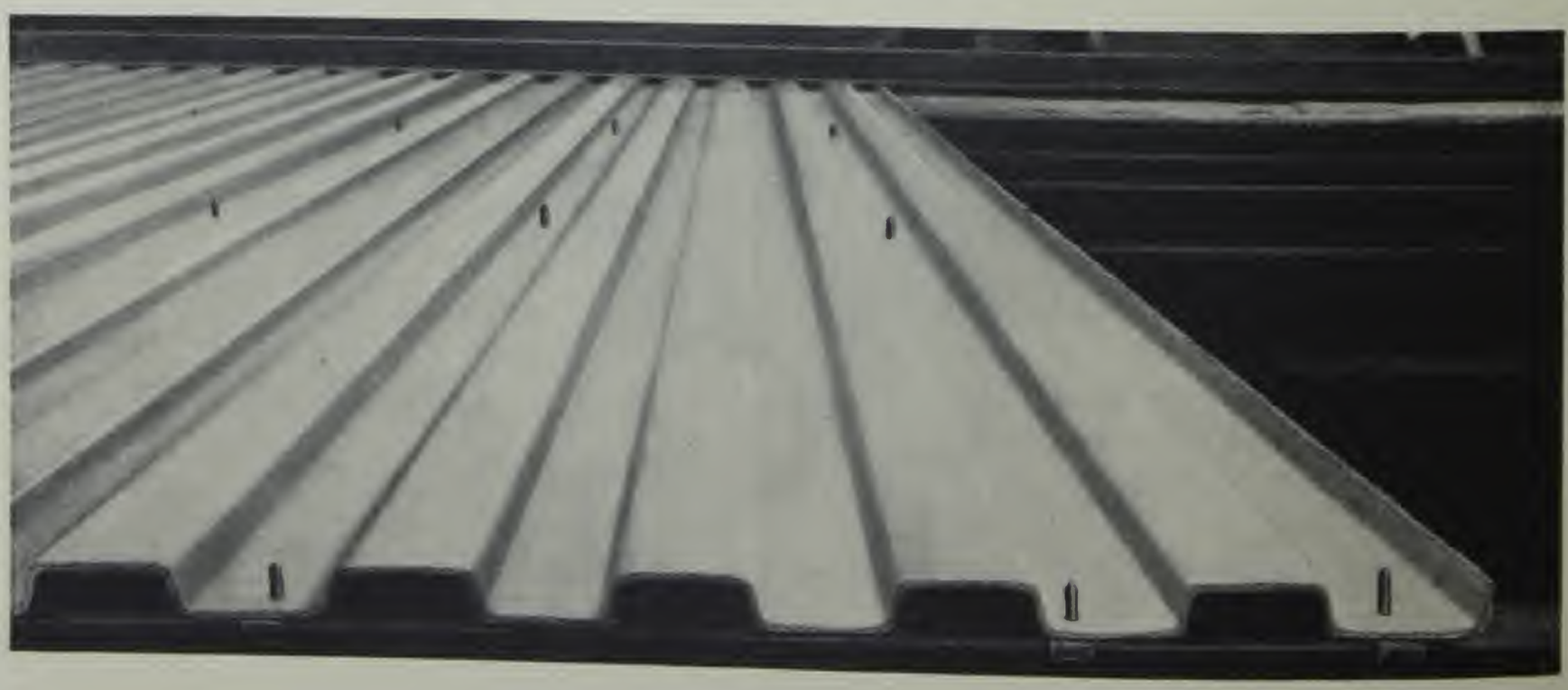
Asbestos Protected Metal is the keystone of the combination. It is made up of four materials, each serving a distinct and useful purpose.

(*a*) Special Open-hearth Sheet-Steel is the stress resisting material. It is especially rolled and annealed, and is shipped to the factory in sealed packages absolutely free from grease or dirt of any kind.

(*b*) Asphalt is the covering that hermetically seals the steel and absolutely protects it from rust or corrosion. This material is the result of extensive experimentation. It is free from acids and inert matter, and furnishes a permanent viscous, adhesive coating for the steel.

(*c*) Asbestos felt serves to protect the asphalt from heat, light, and mechanical injury. (It also adds to the resistance to heat and fire.) This Asbestos Felt is also an original development. It is made in our own mills and contains *nothing* but pure long fiber asbestos.

(*d*) Special white waterproofing is applied to the surface and forced into the body of the asbestos to render it waterproof and increase its wearing qualities.



RIVETS AFTER DRAWING THROUGH SHEET

The great strength of the Asbestosteel form lies in the rectangular corrugations. The ***straight sides*** supported against lateral flexure by the concrete offer enormous resistance under the load.

Asbestos Protected Metal is made by an automatic and continuous process. The steel sheets are heated to a uniform temperature and passed into a hot bath of the asphalt. From this tank the sheets are carried upward through "squeegee" rolls, a giant wringer, the purpose of which is to press the asphalt tight to the steel and make the coating perfectly uniform and free from air pockets. The sheets pass through a set of press-rolls between two sheets of the asbestos felt which are pressed into the hot asphalt. From here it is carried by idlers, stacked, and allowed to cool gradually under pressure.

The sheets are now trimmed and corrugated. The corrugations are rectangular with round corners. The straight sides are in line with the direction of load application and therefore offer a maximum resistance to bending. If they were inclined or corrugated at an acute angle, it would require a much heavier sheet to give the same stiffness. Finally the sheets are passed through the saturating machine, which renders them impervious to moisture.

Asbestosteel sheets are made in the following weights and sizes:

STOCK SIZES	Gauge No.	Approximate Weights per 100 square feet	
		Net	Shipping
24 inches wide in even foot lengths, 5 feet to 12 feet inclusive	26	144	173
	24	182	211
	22	222	251

GARAGE OF AMERICAN TUBE WORKS, SOMERVILLE, MASS.—ASBESTOSTEEL ROOF

ASBESTOSTEEL ROOF CONSTRUCTION
Driving the rivet through the sheet

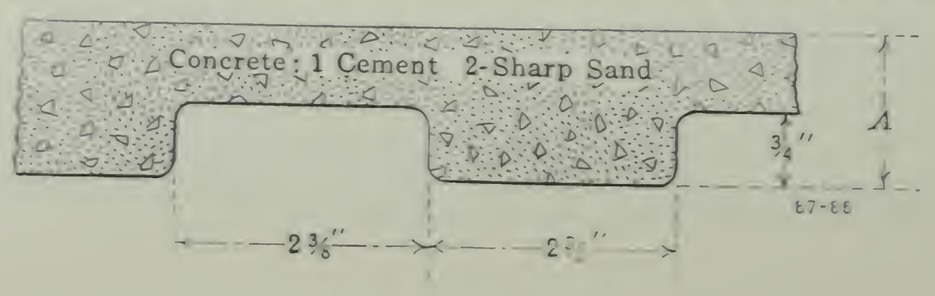
ROOF CONSTRUCTION

The Asbestos Protected Metal is laid directly on the purlins and fastened by special self-punching clip-rivets. No wooden furring strips are necessary. This part of the operation can be more quickly and more easily executed than the erection of an ordinary corrugated steel roof, and the result is infinitely more satisfactory. Indeed, in the majority of cases the roof can be left at this stage for an indefinite period before the concrete is applied.

The sheets are furnished in lengths up to twelve feet. A purlin spacing of four feet is recommended. Spans up to ten feet may be used, although spans over five feet usually require temporary shoring during construction.

Having completed the Asbestos Protected Metal roof, the concrete or cement plaster can be laid on whenever it is convenient. This completes the Asbestosteel construction, on top of which any desired waterproof covering may be applied. The underside requires *no back-plastering*, because the Asbestos Protected Metal needs no protection from corrosion.

Steel wire fabric may or may not be used, according to the wishes of the engineer. It is not necessary to the strength, except for large spans or heavy floor loads, but serves simply to prevent temperature cracks in the concrete.



NEW PLANT OF THE CHANDLER MOTOR CAR COMPANY, CLEVELAND, OHIO
50,000 Square Feet of Asbestosteel Roof. See page 22 for underside (ceiling) view

PROPERTIES OF ASBESTOSTEEL ROOFING

Asbestosteel is a thoroughly scientific material. It possesses all the properties desirable in an ideal roofing material. It has been expressly and successfully developed with that end in view. The component parts have been so chosen and combined as to accentuate the desirable and suppress the undesirable properties of the materials entering into the combination. Among the properties and inherent characteristics of Asbestosteel, the following may be mentioned:

1—*Mechanical Strength.* Asbestosteel roofing is extremely strong, and as ordinarily applied will carry loads far in excess of anything met in usual practice. Actual tests made by applying a uniformly distributed load to finished slabs are tabulated in the accompanying table taken from the Concrete-Cement Age, January, 1913. As will be noted, a material saving in concrete is effected by this form of construction.

LOAD TESTS OF ASBESTOSTEEL SLABS

Slab	Span	Maximum Thickness (A)	Average Thickness of Concrete	Gauge A. P. M.	Cracked at Lbs. Per Sq. Ft.	Ultimate Load Lbs. Per Sq. Ft.	Sq. Ft. Covered by 1 Cu. Yd Concrete	Weight of Slab Lbs. Per Sq. Ft.	Reinforcing Rods
A	4′	1½″	1⅛″	24	265	613	288	15¾	None
B	4′	1½″	1⅛″	26	226	466	288	15½	None
C	4′	1¼″	⅞″	26	262	398	370	12½	None
D	4′	1¼″	⅞″	26	272	381	370	12½	None

GENERAL VIEW OF THE EDGEWATER, N. J., PL...
The roofs and sides of the gallery, about 1000 feet long, are covered with Corrugated

2—*Corrosion Proof.* Asbestosteel is perfectly protected from corrosive agents by a permanent and absolutely impervious coating, as was described on page 8, consequently the steel is safe from its most deadly enemy.

3—*Heat Insulation.* The coverings of asphalt and asbestos greatly increase the heat resistivity, thus minimizing condensation on the inside in cold weather. By properly choosing the material used for the top covering the heat insulation can be increased to almost any desired degree. Special problems, such as non-condensing roofs for paper mills, cold storage warehouses, etc., can be solved with Asbestosteel and show an enormous saving in first cost.

4—*Fire-resisting.* The non-conducting power of the Asbestos Protected Metal and fireproof character of the asbestos covering makes Asbestosteel highly resistant to fire. In fact, much more so than the steel purlins that support it. If used with reinforced concrete purlins, a fireproof construction is the result.

5—*Installation Labor.* In point of minimizing time, labor and construction plant, Asbestosteel roofing is successful to a superlative degree. It is laid directly upon the purlins without furring strips, fastened to them by special self-punching rivets and the sheets joined to each other by rivets and bolts, and then covered by cement plaster. It requires no back plastering and therefore no scaffolding. The successive stages of construction are well illustrated on pages 7, 8, 10, 14, 15, 16 and 23. As will be observed, all erection is from the top.

6—*Weight.* The weight per unit strength is very low. This reacts favorably to the cost of the structure as a whole, since it reduces the roof, column and foundation loads to a minimum without sacrificing any of the desirable characteristics that make for permanent construction.

7—*Appearance.* The underside of the Asbestosteel roof is very pleasing in appearance. The corrugations give a beamed effect and the pure, clean white color of the asbestos aids in diffusing the light and thus adds to the physical comfort of the occupants of the building.

ANT OF THE MIDLAND LINSEED PRODUCTS CO.
Asbestos Protected Metal. The floor is Asbestosteel Construction its entire length

8—*Cost.* The sum and substance of the seven properties set forth above is low cost. A few reasons for low cost are:

1—No skilled labor for installation.
2—No back plastering.
3—No scaffolding.
4—No loss of cement by seepage or drip.
5—Lean mixture of concrete may be used.
6—Minimum dead roof load.
7—Labor-saving construction methods.
8—Efficient utilization of strength of materials.
9—No allowance for corrosion.
10—No maintenance.
11—Low fire insurance rates.
12—No confusion or dirt within the building.

ASBESTOSTEEL WALLS

Corrugated Asbestos Protected Metal sheets are especially prepared for wall construction by punching crescent shaped cuts or rectangular holes into them, as shown on pages 14, 15 and 22. These sheets may be used as lath for either exterior or interior wall surfaces, or they may be plastered on both sides and thus serve as curtain walls. The sheets are perforated for use with the corrugations vertical or horizontal, depending upon the framing of the side walls. The sheets with rectangular holes are for ceiling construction. The vertically corrugated sheets may be erected without studs or girts. They are regularly made in lengths up to 12 feet. The horizontally punched sheets are carried in lengths up to 10 feet. In plastering studless walls in spans greater than 6 feet, it is sometimes necessary to use temporary bracing.

The plaster is applied in the usual manner, except that there is much less waste. The scratch coat is put on with sufficient pressure to force it

A distinct advantage of Asbestosteel construction is that the Asbestos Protected Metal in itself is a truly permanent structure and will not be injured by exposure to the elements. Therefore, once erected, the sheets ordinarily can be left for an indefinite period, and the concrete or plaster applied when most convenient.

TABLE OF SAFE LOADS IN POUNDS PER SQUARE FOOT

FOR ASBESTOSTEEL SLABS

Style	Average Thickness of Slabs	Resisting Moments per Foot Width—in Pounds per Square Inch	Span in Feet							
			3	4	5	6	7	8	9	10
As- 1	1⅛"	568	53	30						
As- 2	1⅜"	804	75	42						
As- 4	1⅝"	1417	131	74	47					
As- 5	1¾"	1810	166	94	61	42				
As- 6	1⅞"	2218	205	116	74	52				
As- 7	2⅛"	2947	273	154	98	69				
As- 8	2¾"	3558	330	185	119	82	61			
As- 9	2⅞"	4231	392	220	141	98	72			
As-10	2⅞"	4881	452	254	163	113	83	64		
As-12	3 "	5694	527	297	190	132	97	74	59	
As-14	3½"	7865	728	410	262	182	134	102	81	66
As-15	3⅞"	10300	953	537	343	238	175	134	106	86

Weight of Concrete—12.5 Lbs. per Square Foot, 1 Inch Thick. $M = \frac{1}{10} w l^2$ Weight of Slab Included)

APPLYING THE CEMENT PLASTER TO ASBESTOSTEEL STUDLESS LATH

TABLE EXPLAINING ASBESTOSTEEL SLABS

FOR VARIOUS SPANS

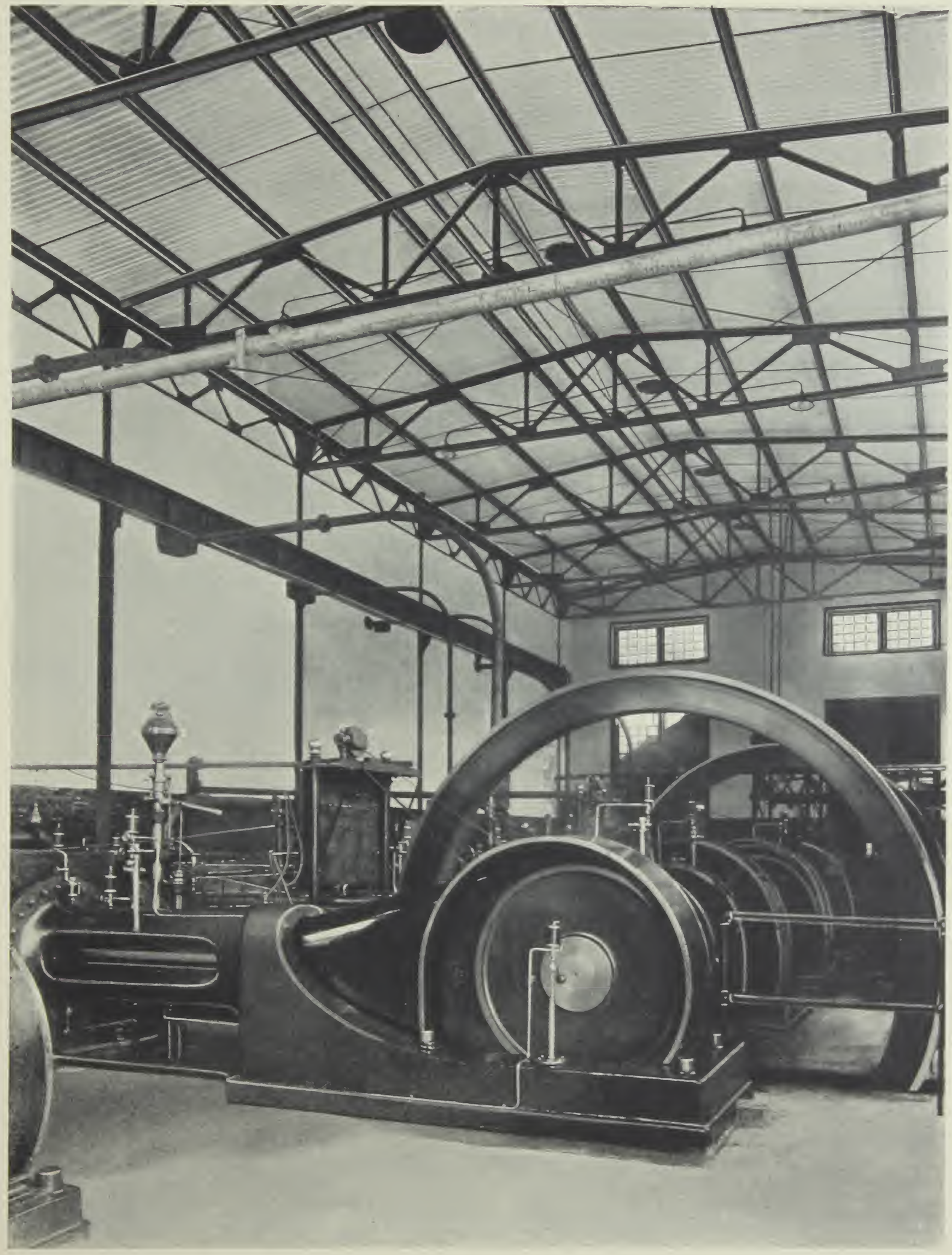
Style	Distance Between Purlins	Thickness of Slab			Gauge of Asbestosteel	Gauge of Wire Mesh	Weight of Slab per Square Foot
		Minimum	Average	Maximum			
As- 1	2′–11 ″	¾″	1 1/8″	1½″	26	None Required	15.6
As- 2	3′– 4½″	1 ″	1⅜″	1¾″	26	None Required	18.8
As- 3	3′–10½″	1¼″	1⅝″	2 ″	26	No. 14	21.8
As- 4	4′– 4½″	1¼″	1⅝″	2 ″	26	No. 14	21.8
As- 5	4′–10½″	1⅜″	1¾″	2⅛″	26	No. 14	23.4
As- 6	5′– 4 ″	1½″	1⅞″	2¼″	26	No. 14	25.0
As- 7	5′– 9 ″	2¼″	2⅝″	3 ″	26	No. 10	34.3
As- 8	6′– 3 ″	2⅜″	2¾″	3⅛″	26	No. 10	35.9
As- 9	6′– 9 ″	2½″	2⅞″	3¼″	26	No. 9	37.4
As-10	7′– 3 ″	2½″	2⅞″	3¼″	26	No. 8	37.4
As-11	7′– 3 ″	2½″	2⅞″	3¼″	24	No. 8	37.7
As-12	7′– 9 ″	2⅝″	3 ″	3⅜″	26	No. 8	39.0
As-13	7′– 9 ″	2⅝″	3 ″	3⅜″	24	No. 8	39.4
As-14	8′– 9 ″	3⅛″	3½″	3⅞″	24	5/16 in.	45.6
As-15	9′– 9 ″	3½″	3⅞″	4¼″	24	5/16 in.	50.3

Safe Live Load—40 Lbs. per Square Foot.
Wherever possible, distance between purlins should be as above.

Weight of Concrete—12.5 Lbs. per Square Foot, 1 Inch Thick.
This will eliminate extra charges for cuts and waste.

APPLYING THE CONCRETE TO THE ROOF

FINISHED APPEARANCE OF ASBESTOSTEEL ROOF AND WALLS—SAWTOOTH CONSTRUCTION



INTERIOR OF THE POWER-HOUSE OF THE PENNSYLVANIA RAILROAD COMPANY, AT PITCAIRN, PA.

Showing the ceiling of the Asbestosteel roof. A ceiling combining the beauty of snow-white enamel with architectural relief in the form of rectangular corrugations, can be obtained by giving the underside of the Asbestosteel a coat of white enamel paint.

POWER HOUSE OF THE AMALGAMATED PHOSPHATE COMPANY, CHICORA, FLORIDA
This building has an Asbestosteel Roof with Corrugated Asbestos Protected Metal Siding and Asbestosteel Lath partitions

through the openings and into the corrugations. A glance at the illustration at the top of page 22 will indicate how the plaster in these openings is uniformly supported and virtually locked to the reinforcing Asbestosteel lath. Before the scratch coat is dry the finish coat should be applied.

Asbestosteel walls and ceilings possess the same valuable characteristics as Asbestosteel roofing. Being safe from destruction by corrosion, they are permanent, they are fire resistant, and highly non-conducting to heat. The labor of erection is small and requires no special skill, since the clinching of the plaster is so easily and perfectly accomplished by the punched openings in the sheets.

Asbestosteel lath is also the best material available for use in connection with stucco work. It is permanent and rustproof. On account of its high heat resistivity it keeps the building cool in summer and makes it easy to heat in winter.

For walls or partitions it is the strongest and most durable material for the price now on the market. It is easily erected, is highly fire resistant, moisture-proof, and can be made to occupy a total thickness of but 1½ inches.

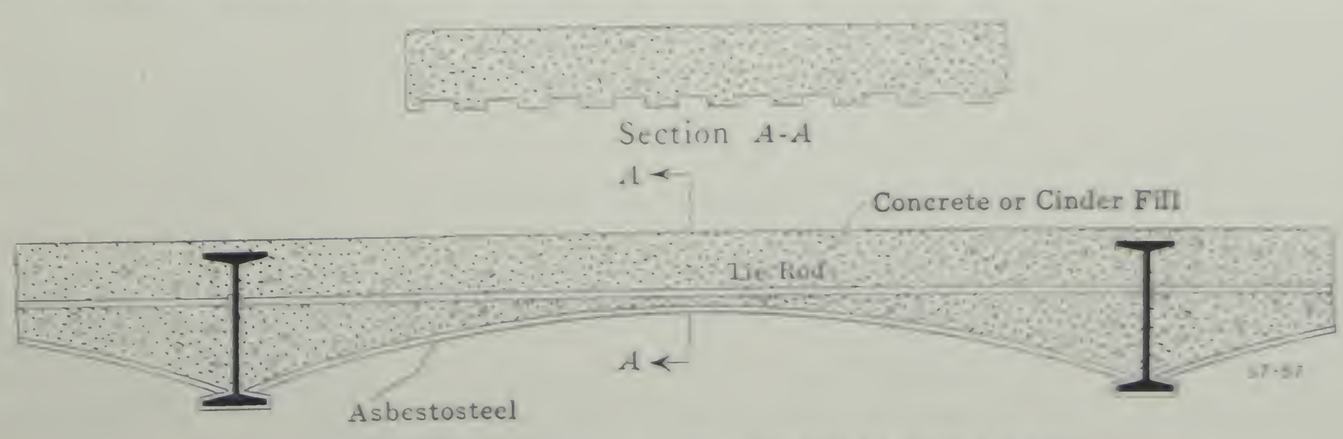
GENERAL VIEW OF AMERICAN PULLEY CO. BUILDINGS AT PHILADELPHIA, PA., NEARING COMPLETION
Asbestosteel roofs and sawtooth construction

SUMMARY

To sum up, let us point out that the advent of Asbestosteel makes possible for the first time in the history of engineering, absolutely permanent, light, moderate cost industrial construction. This claim cannot be justified in connection with any other material or combination of materials. Unprotected metal lath will rust.

The Asbestos Protected Metal Company probably has had a longer and more varied experience in the solving of problems incident to making sheet metal impervious to the elements than any other manufacturer. Asbestosteel construction is an evolution—impossible without this experience.

The Asbestos Protected Metal Company invites correspondence with engineers and others interested in the subject.



ASBESTOSTEEL ARCHES FOR HEAVY FLOOR LOADS
Sheets made to exact span and curved to proper radius at the factory

SIZE OF PURLINS REQUIRED FOR VARIOUS SPANS

Spacing of Purlins	Average Thickness of Slab	Weight of Slab per Square Foot	Length of Purlins or Distances between Trusses											
			10 Feet—0 Inches		12 Feet—0 Inches		14 Feet—0 Inches		16 Feet—0 Inches		18 Feet—0 Inches		20 Feet—0 Inches	
		Pounds	⊏	I	⊏	I	⊏	I	⊏	I	⊏	I	⊏	I
2′ 11″	1⅜″	15.6	4″ 5¼ lb	3″ 5½ lb	5″ 6½ lb	4″ 7½ lb	5″ 6½ lb	4″ 7½ lb	6″ 8 lb	5″ 9¾ lb	7″ 9¾ lb	6″ 12¼ lb	7″ 9¾ lb	6″ 12¼ lb
3′ 4½″	1⅜″	18.8	4″ 5¼ "	4″ 7½ "	5″ 6½ "	4″ 7½ "	6″ 8 "	5″ 9¾ "	7″ 9¾ "	5″ 9¾ "	7″ 9¾ "	6″ 12¼ "	8″ 11¼ "	7″ 15 "
3′ 10½″	1⅜″	21.8	5″ 6½ "	4″ 7½ "	6″ 8 "	5″ 9¾ "	6″ 8 "	5″ 9¾ "	7″ 9¾ "	6″ 12¼ "	8″ 11¼ "	6″ 12¼ "	9″ 13¼ "	7″ 15 "
4′ 4½″	1⅜″	21.8	5″ 6½ "	4″ 7½ "	6″ 8 "	5″ 9¾ "	7″ 9¾ "	6″ 12¼ "	8″ 11¼ "	6″ 12¼ "	8″ 11¼ "	7″ 15 "	9″ 13¼ "	7″ 15 "
4′ 10½″	1¾″	23.4	5″ 6½ "	4″ 7½ "	6″ 8 "	5″ 9¾ "	7″ 9¾ "	6″ 12¼ "	8″ 11¼ "	7″ 15 "	9″ 13¼ "	7″ 15 "	10″ 15 "	8″ 18 "
5′ 4 ″	1⅞″	25.0	6″ 8 "	5″ 9¾ "	7″ 9¾ "	5″ 9¾ "	8″ 11¼ "	6″ 12¼ "	9″ 13¼ "	7″ 15 "	9″ 13¼ "	7″ 15 "	10″ 15 "	8″ 18 "
5′ 9 ″	2⅛″	34.3	6″ 8 "	5″ 9¾ "	7″ 9¾ "	6″ 12¼ "	8″ 11¼ "	7″ 15 "	9″ 13¼ "	7″ 15 "	10″ 15 "	8″ 18 "	12″ 20½ "	9″ 21 "
6′ 3 ″	2¼″	35.9	6″ 8 "	5″ 9¾ "	8″ 11¼ "	6″ 12¼ "	9″ 13¼ "	7″ 15 "	10″ 15 "	8″ 18 "	12″ 20½ "	9″ 21 "	12″ 20½ "	9″ 21 "
6′ 9 ″	2⅜″	37.4	7″ 9¾ "	6″ 12¼ "	8″ 11¼ "	6″ 12¼ "	9″ 13¼ "	7″ 15 "	10″ 15 "	8″ 18 "	12″ 20½ "	9″ 21 "	12″ 20½ "	10″ 25 "
7′ 3 ″	2⅜″	37.7	7″ 9¾ "	6″ 12¼ "	8″ 11¼ "	7″ 15 "	9″ 13¼ "	8″ 18 "	12″ 20½ "	8″ 18 "	12″ 20½ "	9″ 21 "	12″ 20½ "	10″ 25 "
7′ 9 ″	3 ″	39.4	7″ 9¾ "	6″ 12¼ "	9″ 13¼ "	7″ 15 "	10″ 15 "	8″ 18 "	12″ 20½ "	9″ 21 "	12″ 20½ "	10″ 25 "	15″ 33 "	10″ 25 "
8′ 9 ″	3½″	45.6	8″ 11¼ "	6″ 12¼ "	9″ 13¼ "	7″ 15 "	10″ 15 "	8″ 18 "	12″ 20½ "	9″ 21 "	15″ 33 "	10″ 25 "	15″ 33 "	12″ 31½ "
9′ 9 ″	3⅞″	50.3	9″ 13¼ "	7″ 15 "	10″ 15 "	8″ 18 "	12″ 20½ "	9″ 21 "	15″ 33 "	10″ 25 "	15″ 33 "	12″ 31½ "	15″ 33 "	12″ 31½ "

Concrete—150 Lbs. per Cubic Foot. Asbestosteel No. 26—1.41 Lbs. per Square Foot. Asbestosteel No. 24—1.82 Lbs. per Square Foot. Live Load—40 Lbs. per Square Foot.
Except on long spans, the channels should be used, as they are more economical of structural steel than I-beams.

Bridge support, to carry reinforcement over purlins.

Asbestosteel slab on channel purlins, indicating the relative location of the APM rectangular corrugated sheet, the concrete, the reinforcement rods and the waterproofing

Purlin clip. Hooked over flange of purlin, the self-punching rivet permits fastening the sheets from above.

A STORAGE BUILDING OF ONE OF THE PLANTS OF THE ARMSTRONG CORK COMPANY
Stair Enclosures and Partitions Asbestosteel Studless Lath Throughout

INTERIOR OF ONE OF THE BUILDINGS OF THE AMERICAN PULLEY COMPANY, PHILADELPHIA
Roof of Asbestosteel Sawtooth Construction

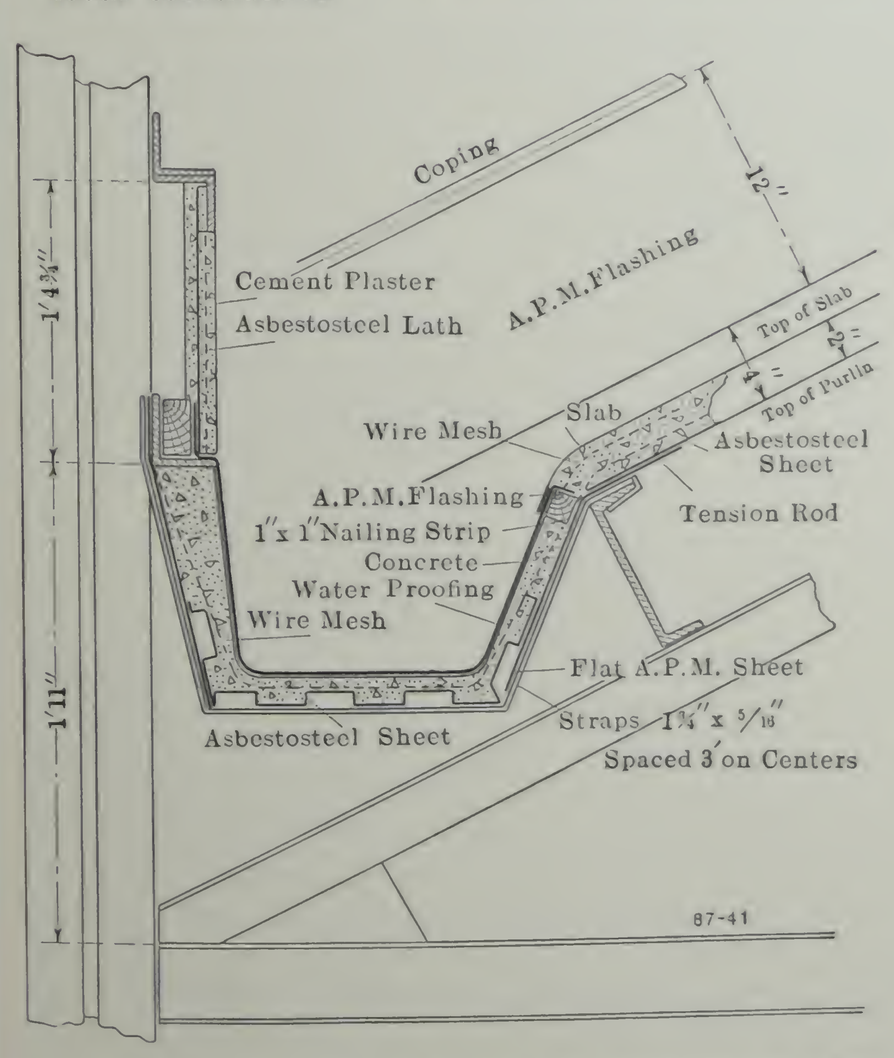
ASBESTOSTEEL LATH, HORIZONTAL TYPE
Showing plaster locked in crescents

INTERIOR OF ONE OF THE BUILDINGS OF THE CHANDLER MOTOR CAR COMPANY, CLEVELAND, OHIO
Showing an expanse of Asbestosteel ceiling. Asbestosteel roof-construction used throughout

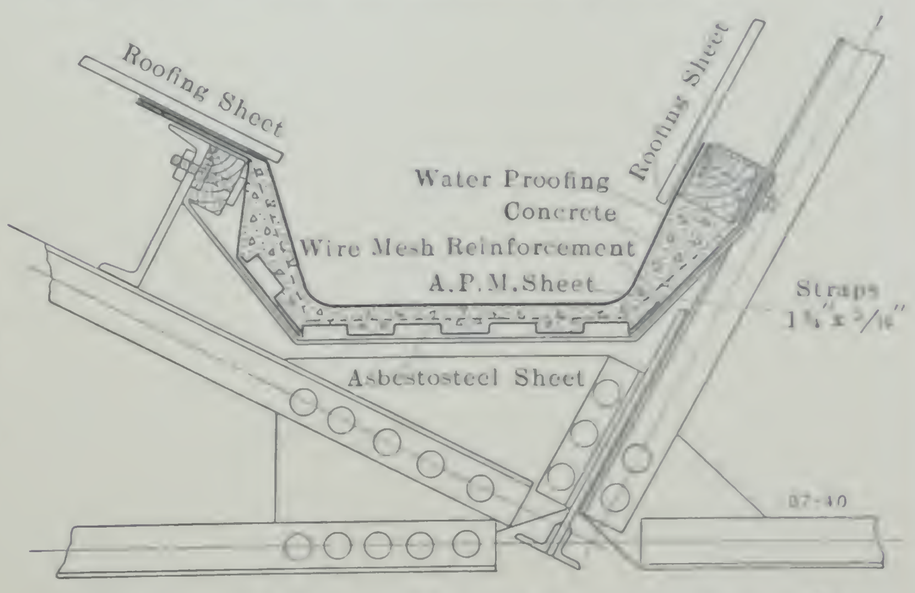
ASBESTOSTEEL GUTTERS

Covering the wire mesh reinforcement of an Asbestosteel sawtooth gutter with concrete. Asbestosteel concrete gutters are adapted to any valley or sawtooth construction.

Asbestosteel valley gutter finished, ready for waterproofing. The concrete fills the corrugations, providing an even surface for the application of the tar and gravel or whatever the waterproofing may be.



Section of Asbestosteel sawtooth construction. The Asbestosteel sheet presents a clean, smooth, white underside that requires no back plastering.



Section of Asbestosteel Gutter construction. Iron straps, fastened to purlins used in the roof construction, support the Asbestosteel sheet. No extra steel framing is needed. Drainage is provided for either by regulation in the length of the supporting straps or by varying the thickness of the concrete slab. It is very strong yet lighter in weight than any other type of solid gutter suitable for the purpose. It will withstand without damage all service and traffic to which it may be subjected by window cleaners, etc. Being erected without the use of temporary forms, it can be placed rapidly and without skilled labor. It is adaptable to any type of roof framing and any standard type of drainage connections may be employed. It is permanently watertight. It is lower in cost than any other permanent gutter.

THE ASBESTOS PROTECTED METAL COMPANY is the original and only manufacturer of Asbestos Protected Metal and owns and controls the basic patents covering the material, the processes and the methods employed. It maintains its own laboratories for experiment and research, and in consequence of the care and attention given to every detail and to each stage of the manufacture, a uniformly high grade, economical and meritorious product is assured. Asbestos Protected Metal in its various forms, the processes of manufacture and the machinery employed are covered by United States patents dated as follows:

April 3, 1906	Nov. 13, 1906	Sept. 5, 1911	April 8, 1913	July 29, 1913
April 24, 1906	Nov. 13, 1906	Sept. 5, 1911	April 22, 1913	July 29, 1913
June 12, 1906	Jan. 8, 1907	Sept. 5, 1911	July 29, 1913	

Other patents allowed and pending. Patents allowed also in Canada, Mexico and the European countries.

Proposals for Asbestosteel construction, prices of Asbestos Protected Metal products, the Company's literature, the services of its Engineering Department or any other information regarding the Asbestos Protected Metal Company's specialties may be obtained by addressing the Company at any of its offices or agencies.

OTHER APM PRODUCTS

APM . . . . . Corrugated Sheets
APM . . . . . Special Beaded Sheets
APM . . . . . Clapboard Siding
APM . . . . . Flat Sheets
APM . Ridge Cap, Flashings and Trim
APM . . . . . Standard Louvres
APM . . . . . Skylight Bars
APM Special Stucco Lath (for residences)
APM . . . Flexible Asbestos Shingles
APM . . . . . Asbestos Tiles
APM . . . . . Asbestos Roll Roofing
APM . . . . Asbestos Building Papers
APM . . . . . Special Roof Paint
APM . . . . . Roof Cements
APM . Special Roofing Nails and Fasteners

LIST OF OFFICES AND AGENCIES

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ASBESTOS FELT WORKS . . . . . WALTHAM, MASS.

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